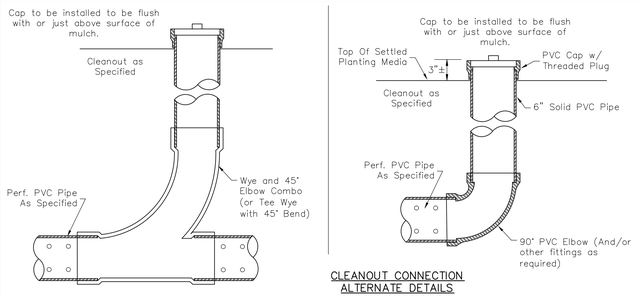
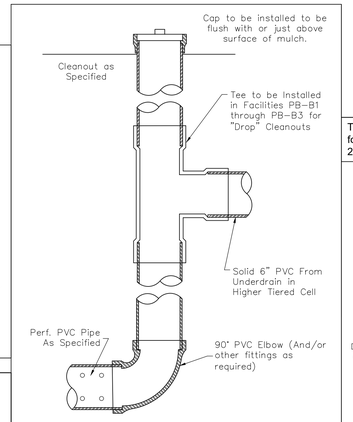
Note: All PVC to be Schedule 40 unless specified otherwise.

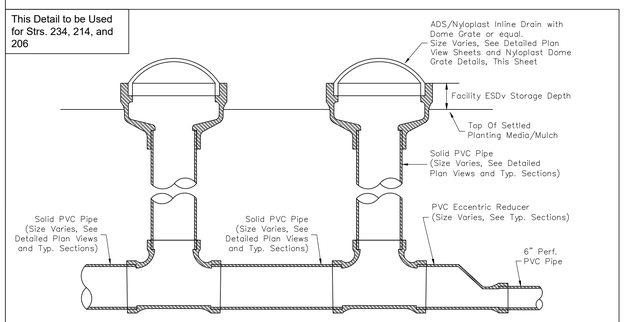


CLEANOUT CONNECTION ALTERNATE DETAILS

N.T.S.



This Detail to be Used for Strs. 234, 214, and 206

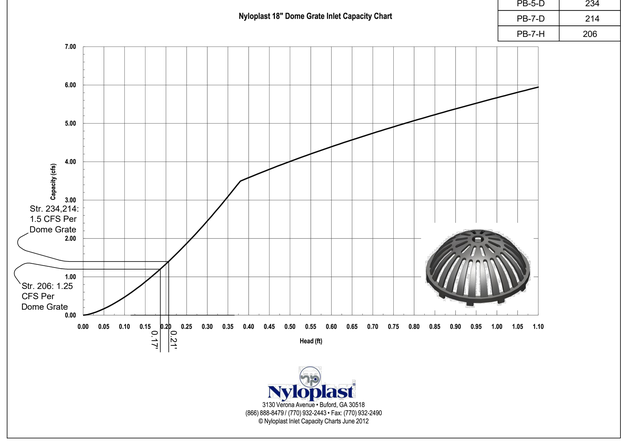


PLANTER BOX MICRO-BIORETENTION OVERFLOW OUTLET DETAIL

N.T.S.

This Detail to be Used for Cleanout Construction in Planter Box Facility Cells PB-5-A, PB-5-B, PB-5-C and PB-5-D. See Detailed Plan View and Typical Sections.

Facility ID	Structure No.
PB-5-D	234
PB-7-D	214
PB-7-H	206



Nyloplast
3130 Verona Avenue • Buford, GA 30518
(866) 888-8479 / (770) 932-2443 • Fax: (770) 932-2490
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PERFORATION REQUIREMENTS			
PIPE DIAMETER	PERFORATION or SLOT DIM.	HOLES PER LINEAR FOOT	HOLE CONFIGURATION
6"	0.375" (⅜") Dia.	12	4 @ 90°c/c
6"	0.125"W x 1.9"L	12	4 @ 90°c/c

The underdrain pipe consists of 6-inch diameter Schedule 40 or stronger perforated PVC pipes at 0.00% Perforations must be ⅜" inch in diameter and must be located 4 inches on center, every 90 degrees around the pipe. An acceptable alternative to perforations is slots at ⅛" wide by a minimum 1.9" long. Slots should also be placed in four rows per linear foot with four slots per row.

Access for cleaning all underdrain piping is needed. Cleanouts for each pipe should extend at least 6 inches above the top of the upper filter surface (i.e. the top layer of the upper gravel) and have a removable waterproof cap.

REQUIRED AGGREGATE GRADATION (MCDPS)			
Seive		Mass Percent Passing	
		UNDERDRAIN	FILTER AGGREGATE
mm	U.S. Std.	M.S.H.A. Coarse Aggregate No. 7	ASTM C-33 Concrete Sand
25.0	1 inch	–	–
19.0	¾ inch	100	–
12.5	½ inch	90 – 100	–
9.5	⅜ inch	40 – 70	100
4.75	No. 4	0 – 15	95 – 100
2.36	No. 8	0 – 5	80 – 100
1.18	No. 16	–	50 – 85
0.60	No. 30	–	25 – 60
0.30	No. 50	–	5 – 30
0.15	No. 100	–	0 – 10
0.075	No. 200	–	0 – 5

SAND SPECIFICATIONS:

Washed natural sand meeting the gradation reqiuirements of ASTM C33 Fine Aggregate Concrete Sand is utilized for stormwater management applications. In addition to the ASTM C33 specification, sand must meet ALL of the following conditions:

1. Sand must meet gradation requirements for ASTM C-33 Fine Aggregate Concrete Sand. AASHTO M-6 gradation is also acceptable.
2. Sand must be silica based; no limestone based products may be used. If the material is white or gray in color, it is probably not acceptable.
3. Sand must be clean. Natural, unwashed sand deposits may not be used. Likewise, sand that has become contaminated by improper storage or installation practices will be rejected.
4. Manufactured sand or stone dust is not acceptable under any circumstance.

Bioretention Area Planting Soil Documentation Requirements:
If the bioretention area planting soil is provided by a supplier, the contractor is required to provide the design engineer with a certification from the supplier verifying that the material meets the requirements and specifications shown hereon. If the bioretention area planting soil is mixed by the contractor, the contractor is required to notify the design engineer prior to ordering the materials. Prior to mixing, the contractor shall provide a certification with associated test results that the topsoil, compost and perlite meet the respective specifications as outlined hereon. The contractor shall also provide certification that the mixed planting soil meets the specifications.

MICRO-BIORETENTION AREA SPECIFICATIONS

A. Planting Media

The planting media shall consist of 1/3 perlite or salite, 1/3 compost and 1/3 topsoil. The perlite shall be coarse grade horticultural perlite. The compost shall be high grade, seasoned compost free of stones and partially composted woody material. The topsoil shall meet the following minimum criteria: contain 0 – 10% clay, 10 – 25% silt and 60 – 75% sand and meet other requirements as outlined in the 2000 Maryland Stormwater Design Manual Appendix B.3.B.2. The topsoil shall be free of stones, stumps, roots or other material larger than 2" in any dimension, and free of any substance that may be harmful to plant growth or a hindrance to planting or maintenance operations. The planting media shall be free of plants or plant parts of Bermuda grass, Quack grass, Johnson grass, Mugwort, Nutsedge, Poison Ivy, Canadian Thistle, or other noxious weeds as specified under COMAR 15.08.01.05. It shall not contain toxic substances harmful to plant growth.

B. Mulch Layer Specifications

A 3" mulch layer shall be provided on top of the planting media. The mulch shall be double-shredded, aged hardwood. Pine Bark mulch is NOT acceptable. The mulch must be well aged, uniform in color, and free of foreign material including plant material.

C. Sand Bed Specifications

A minimum 6-inch fine aggregate sand layer shall be provided, and shall meet the requirements of ASTM C-33 or AASHTO M6 Fine Aggregate Concrete Sand. The sand shall be free of deleterious material. Sand must be silica-based; no limestone or dolomite based products may be used. If the material is gray in color, it is probably not acceptable. Sand must be clean; sand that has become contaminated by improper storage or installation practices will be rejected. Manufactured sand or stone dust is NOT acceptable.

D. Gravel (Aggregate) Bed Specifications

The gravel layer surrounding the underdrain pipe(s) must meet MSHA Size No. 7 (Table 901A), and must provide a minimum of 6 inches cover over the pipe(s) and a minimum of 3 inches under the pipe(s) unless otherwise specified. NO geotextile or filter fabric is allowed anywhere within the filter media (stone, sand and soil).

E. Excavation, Material Placement and Compaction

All excavation, material placement and compaction shall be in conformance with the 2000 Maryland Stormwater Design Manual, Appendix B.3.B.3.

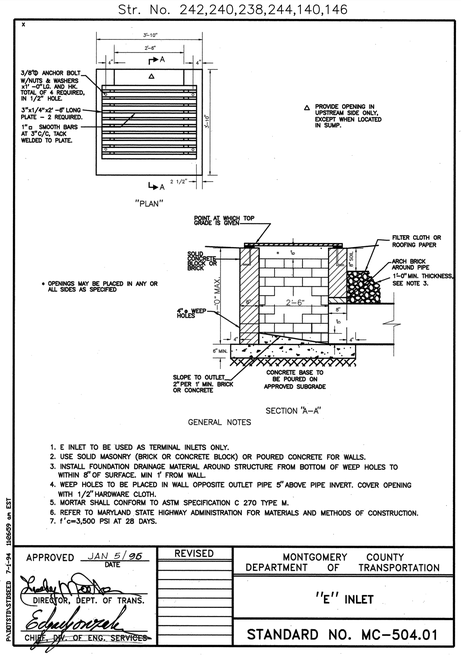
Micro-Bioretention facilities should be excavated by hoe, if possible. If excavation is done using a loader, wide track or marsh track equipment should be used. If narrow track equipment is used in the facility for excavation, the bottom of the excavation shall be tilled 12" deep with a chisel plow, ripper or subsoiler.

Grade micro-bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks. Do not use heavy equipment within the micro-bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply planting media, sand and aggregate.

The sand layer shall be placed damp and lightly compacted so as to ensure the full 6" thickness.

Place planting media in lifts of 12" to 18". Planting media shall be lightly compacted by hand tamping or other approved methods. The planting media shall be flooded (puddled) after placement. Any settlement that occurs shall be filled back to the design elevation with planting media.

Str. No. 242,240,238,244,140,146



GENERAL NOTES

1. E INLET TO BE USED AS TERMINAL INLETS ONLY.
2. USE SOLID MASONRY (BRICK OR CONCRETE BLOCK) OR POURED CONCRETE FOR WALLS.
3. INSTALL FOUNDATION DRAINAGE MATERIAL AROUND STRUCTURE FROM BOTTOM OF WEEP HOLES TO WITHIN 8" OF SURFACE. MIN 1' FROM WALL.
4. WEEP HOLES TO BE PLACED IN WALL OPPOSITE OUTLET PIPE 5" ABOVE PIPE INVERT. COVER OPENING WITH 1/2" HARDWARE CLOTH.
5. MORTAR SHALL CONFORM TO ASTM SPECIFICATION C 270 TYPE M.
6. REFER TO MARYLAND STATE HIGHWAY ADMINISTRATION FOR MATERIALS AND METHODS OF CONSTRUCTION.
7. f'c=3,500 PSI AT 28 DAYS.

APPROVED JAN 5/06 DATE	REVISED	MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION
DIRECTOR, DEPT. OF TRANS.		"E" INLET
CHIEF, DIV. OF ENG. SERVICES		STANDARD NO. MC-504.01

PLOTTED:7/7/2006 11:05:09 am EST

ARCHITECT
SEI SMOLEN • EMR • ILKOVITCH ARCHITECTS
9211 CORPORATE BLVD, SUITE 340
ROCKVILLE, MD 20850
301-770-0177(P) 301-330-3224(F)

CIVIL
MACRIS, HENDRICKS & GLASCOCK
9220 WIGHTMAN RD, SUITE 120
MONTGOMERY VILLAGE, MD 20886
301-670-0840(P)

STRUCTURAL
COMPREHENSIVE STRUCTURAL SOLUTIONS
9220 WIGHTMAN RD, SUITE 120
MONTGOMERY VILLAGE, MD 20886
240-200-5599(P)

MECH./ELECTRICAL/PLUMBING
JAMES POSEY ASSOCIATES
11155 RED RUN BLVD, SUITE 310
BALTIMORE, MD 21117
410-265-6100(P)

KITCHEN
NYIKOS-GARCIA FOODSERVICE DESIGN, INC
18219-A FLOWER HILL WAY
GAITHERSBURG, MD 20879
240-683-9530 (P)

SUSTAINABILITY
DOO CONSULTING, LLC
531 PICCADILLY ROAD
BALTIMORE, MD 21204
443-653-3792 (P)

CONSTRUCTION MANAGER
SKANSKA USA BUILDING INC.
700 KING FARM BLVD, SUITE 200
ROCKVILLE, MD 20850
301-795-3100 (P)

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No.: 16905, Expiration Date: 4.21.2022.

PROFESSIONAL SEAL:

PRINTS ISSUED

NO:	DESCRIPTION:	DATE:
1	BID DOCUMENTS	10/21/2020
2	ADDENDUM #2	11/25/2020
3	ADDENDUM #3	12/01/2020
4	ADDENDUM #4	12/03/2020
5		

TAX MAP FT62 WSSC 224NW09
PLAT 12762
9TH ELECTION DISTRICT
CITY OF GAITHERSBURG, MD

GAITHERSBURG CLUSTER ELEMENTARY SCHOOL #8

MONTGOMERY COUNTY PUBLIC SCHOOLS

SHEET TITLE:
SOIL EROSION, SEDIMENT CONTROL AND STORMWATER MANAGEMENT PLAN

PROJECT NO: 19007
DATE: 12/04/20
SCALE: 1"=30'

SHEET NO:
C4.11
Sheet 15 of 28

SM#285890
SC015SWDETAIL SC#286335
SWM DETAILS AND SPECIFICATIONS